

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 89-184

REVISION OF SITE CLEANUP ORDER

SANDIA CORPORATION and
U. S. DEPARTMENT OF ENERGY,
LIVERMORE, ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. Sandia National Laboratory Livermore (SNLL) is a research facility operated by Sandia Corporation (SC) under contract to the U. S. Department of Energy (DOE). SNLL occupies 413 acres of land in the east Livermore-Amador Valley of Alameda County, shown on the Location Map of attachment 1, owned by the DOE. SC and the DOE shall hereinafter be referred to as dischargers. For the purposes of this Order, DOE will be responsible for compliance in the event that SC fails to comply with the requirements of this Order.
2. The site was first used in 1942 by the U. S. Navy as a Naval Air Station. The site extended south from East Avenue as shown on the Site Location Map of Attachment 2. Site facilities included barracks, public works yard, fuel, paint and drum storage area near Arroyo Seco, an old Navy landfill, and athletic fields and a firing range.
3. From 1946, when the Naval Air Station was closed, to 1956 when SC began occupancy, site use consisted of disposal of construction debris in the old Navy landfill by the adjacent Lawrence Livermore National Laboratory (LLNL), and use of the firing range by the Livermore Rod and Gun Club.
4. Since 1956, SNLL has used the site for non-nuclear weapons research. In 1987, SNLL acquired additional properties that will serve as a buffer zone as shown on the map of Attachment 3. Site facilities currently include numerous storage, testing and research buildings also shown on Attachment 3. Hazardous wastes have not been disposed of onsite, but have been, and are, disposed of in accordance with State and Federal regulations. Hazardous materials are currently used in research activities, and are handled and stored onsite pursuant to Resource, Conservation and Recovery Act regulations administered by State and Federal Agencies.
5. In 1975, a punctured underground pipe from a fuel storage tank allowed about 59,500 gallons of #2 diesel fuel to leak into a construction trench. About 600 gallons of fuel was recovered from the trench after discovery of the leak.
6. Hydrogeologic investigations conducted in the diesel fuel spill area between 1984 and 1986 defined a pollution plume of petroleum hydrocarbons in the soil from ground surface to the water table at a depth of about 100 feet. A total of ten ground water monitor wells have been installed in the diesel fuel spill area and have been monitored on a quarterly basis since March, 1986. Free product was not encountered on the water table. Trace amounts of dissolved constituents have been detected in a monitor well (4C) located within the margins of the soil plume.

7. The old Navy landfill was included in Rank 4 of the State's list of solid waste disposal sites pursuant to Section 13273 of the California Water Code. A Solid Waste Assessment Test (SWAT) Report will be required to be submitted by July 1, 1990 to determine if a release of hazardous waste has occurred that has migrated to the soil or ground water.
8. In mid-1984, DOE instituted the Comprehensive Environmental Assessment and Response Program (CEARP) to evaluate existing site environmental problems. Phase I, submitted in October, 1986, identified site areas requiring further investigation. Phase II, submitted in August, 1987, confirmed the presence of potential environmental problems at the diesel fuel spill area and the old Navy landfill.
9. In 1987, the former Trudell Auto Repair Shop, located in the northwest corner of parcel 99A-1601-4-5 of the buffer zone properties, was included in the CEARP investigations. Hydrogeologic investigations at the Trudell site identified areas of soil pollution in localized areas of the site, and in two areas where waste oil has been disposed of to land. Pollution constituents include petroleum hydrocarbons, low levels of tetrachloroethylene (PCE), trichloroethylene (TCE) and trace amounts of pesticides.
10. On September 21, 1988 the Regional Board adopted Order No. 88-142 to consolidate all site work accomplished by SC and within the DOE CEARP, and to set forth provisions and specifications for the development and implementation of site cleanup alternatives for identified areas of soil and ground water pollution.
11. SC submitted a Remedial Investigation Report for the Trudell site (per Order 88-142) to the Board in September 1989. The report finds that soil contamination is limited to within five feet below the surface. Contaminants have not migrated through the vadose zone into the groundwater.
12. SC submitted a Remedial Investigation Report for the diesel fuel spill area (per Order 88-142) to the Board in April, 1989. Based on the site conditions, SC determined that they would have to perform bench studies to gather data on the feasibility and cost effectiveness of various remedial alternatives. The results of the bench studies would be included in the fuel spill area Feasibility Study.
13. Order 88-142 is being revised to allow SC an additional year to perform their bench studies and to complete their fuel spill Feasibility Study. The deadline for the follow-up Compliance Monitoring and Verification Report will also be extended. All other deadlines and requirements of the previous Order will remain the same.
14. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives for non-tidal waters including Arroyo Mocho, Arroyo Seco, Arroyo Las Positas, Arroyo de la Laguna, and their tributaries, and for Livermore-Amador Valley ground waters.
15. The existing and potential beneficial uses of the ground waters underlying the Livermore-Amador Valley ground water basin and its subbasins include:
 - a. Municipal and domestic supply
 - b. Industrial supply
 - c. Industrial service supply
 - d. Agricultural supply

16. The existing and potential beneficial uses of the surface water in the Livermore-Amador Valley ground water basin include:
 - a. Contact and non-contact water recreation
 - b. Wildlife habitat
 - c. Ground water recharge
 - d. Fish migration and spawning
17. The dischargers have caused or permitted and threaten to cause or permit, waste to be discharged or deposited where it is or probably will be discharged to waters of the State and creates or threatens to create a condition of pollution or nuisance.
18. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.
19. The Board has notified all interested agencies and persons of its intent under Section 13304 of the California Water Code to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.
20. The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that Sandia Corporation and the U. S. Department of Energy shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge or disposal of wastes or hazardous materials in a manner which will degrade the water quality or adversely affect the beneficial uses of the ground waters of the State is prohibited.
2. The discharge of wastes or hazardous materials through direct surface discharge or runoff or subsurface transport which will degrade the water quality and adversely affect the beneficial uses of the surface waters of the State is prohibited.
3. Activities associated with site investigation or cleanup which will cause significant adverse migration of the pollution are prohibited.
4. The cleanup and containment of any polluted soil or ground water by the dischargers which will cause significant adverse spreading or migration of any pollution originating from other sites is prohibited.

B. SPECIFICATIONS

1. The dischargers shall identify the location of all potential sources of hazardous material disposed of, or discharged to, the discharger's facility, and shall determine if a discharge to soil or ground water has occurred.

2. The dischargers shall define the horizontal and vertical extent of all soil and ground water pollution.
3. Local and regional hydrogeologic conditions shall be defined in the areas of and contiguous to identified pollution.
4. The dischargers shall identify and properly seal or abandon all wells within the legal boundaries of the facility which may have been, or threaten to be, conduits for the spread of ground water pollution.
5. The storage, handling, treatment or disposal of polluted ground water shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

C. PROVISIONS

1. Sandia Corporation and the U. S. Department of Energy shall perform all investigation and cleanup work in accordance with the requirements of this Order. All technical reports submitted in compliance with this Order shall be satisfactory to the Executive Officer, and, if necessary, the dischargers may be required to submit additional information.
2. To comply with all Prohibitions and Specifications of this Order, SC and DOE shall meet the following compliance task and time schedule.

COMPLIANCE TASK SCHEDULE

<u>Compliance Documents and Tasks</u>		<u>Compliance Date</u>
TRUDELL AUTO REPAIR SHOP SITE:		
a.	TRUDELL SITE FEASIBILITY STUDY (FS) Report on cost/feasibility study of site cleanup alternatives including a schedule for implementation of each alternative. The Board will select a site cleanup alternative.	3/23/90
b.	TRUDELL SITE COMPLIANCE MONITORING AND VERIFICATION REPORT (CMVR) Report documenting implementation of site cleanup as proposed in final FS (Provision 2.a.) and completed to the satisfaction of the Executive Officer.	6/21/91
DIESEL FUEL SPILL AREA:		
c.	DIESEL FUEL SPILL FEASIBILITY STUDY (FS) Report on cost/feasibility study of site cleanup alternative including a schedule for implementation of each alternative. The Board will select a site cleanup alternative	9/28/90

- d. DIESEL FUEL SPILL COMPLIANCE MONITORING AND VERIFICATION REPORT (CMVR) 9/27/91
Report documenting implementation and status of site cleanup as proposed in final FS (Provision 2.c), including projected final completion date.

GENERAL SITE:

- e. SNLL SITE POTENTIAL CONDUIT WELLS 3/23/90
Letter report identifying any potential conduit wells within the SNLL facility boundaries; to include a plan for well closure for any such identified wells.
- f. WELL CLOSURE SUMMARY REPORT 12/21/90
Technical report documenting work done for closure of all conduit wells within the SNLL site boundaries.

3. Documentation of compliance with the Specifications and Provisions of this Order shall include ground water contour maps, pollutant concentration contour maps, geologic cross sections, borehole logs (ie., lithologic and geophysical), and laboratory analyses. These maps and illustrations shall be updated when submitted with each technical report required under this Order.
4. All hydrogeologic plans, specifications, reports, and documents shall be signed by or stamped with the seal of a registered geologist, certified engineering geologist, or registered civil engineer.
5. All samples shall be analyzed by State certified laboratories using approved EPA methods for the type of analysis performed. All laboratories shall maintain quality assurance/quality control records for Board review.
6. The dischargers shall submit detailed quarterly progress reports summarizing work accomplished toward compliance with the Provisions specified in this Order. The quarterly reports shall be received by the Regional Board by the end of the second week following each quarter; reports will be due in the months of April, July, October and January. The reports shall include:
- a. a summary of work completed since the previous report,
 - b. identification of potential problems which will cause or threaten to cause noncompliance with this Order,
 - c. documentation of events of noncompliance and the reasons therefore, and a plan for achieving compliance,
 - d. well construction data, cumulative ground water levels and chemical analysis results presented in tabulated form for all site monitor wells,
 - e. raw chemical analysis results for all site monitor wells, and
 - f. a schedule sampling frequency and type of analytical test method(s) to be used for all site monitor wells, updated as appropriate.

7. The dischargers shall maintain in good working order and efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.
8. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order shall be provided to the following agencies:
 - a. California Department of Health Services/TSCD
 - b. State Water Resources Control Board
 - c. U. S. Environmental Protection Agency/Region IX
 - d. Zone 7, Alameda County Flood Control District
9. Order No. 88-142 is hereby rescinded.
10. The dischargers shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:
 - a. entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept,
 - b. access to copy any records required to be kept under the terms and conditions of this Order,
 - c. inspection of any monitoring equipment or methods required by this Order, and
 - d. sampling of any ground water or soil which is accessible, or may become accessible as part of any investigation or remedial action program, to the discharger.
11. If the dischargers are delayed, interrupted or prevented from meeting one or more of the compliance dates specified in this Order, SC shall notify the Executive Officer by telephone prior to the compliance deadline date. Such notification in no way relieves the dischargers of their obligation of meeting these dates.
12. The dischargers shall file a report on any changes in site occupancy and ownership associated with the facility described in this Order.
13. SC shall report any newly discovered spill of oil or other hazardous material. Spills shall be reported to this Regional Board at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-office hours, by telephone immediately after discovery of occurrence. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to the nature of waste or pollutant, quantity involved, duration of incident, cause of spill, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and a schedule of these activities, and persons notified.
14. Within sixty (60) days of the Executive Officer's determination and actual written notice to DOE (owner) that SC (operator) has failed to comply with the Provisions of this Order, the DOE, as landowner, shall comply with these Provisions.

15. The Board will review this Order periodically and may revise the requirements or compliance schedules when necessary.

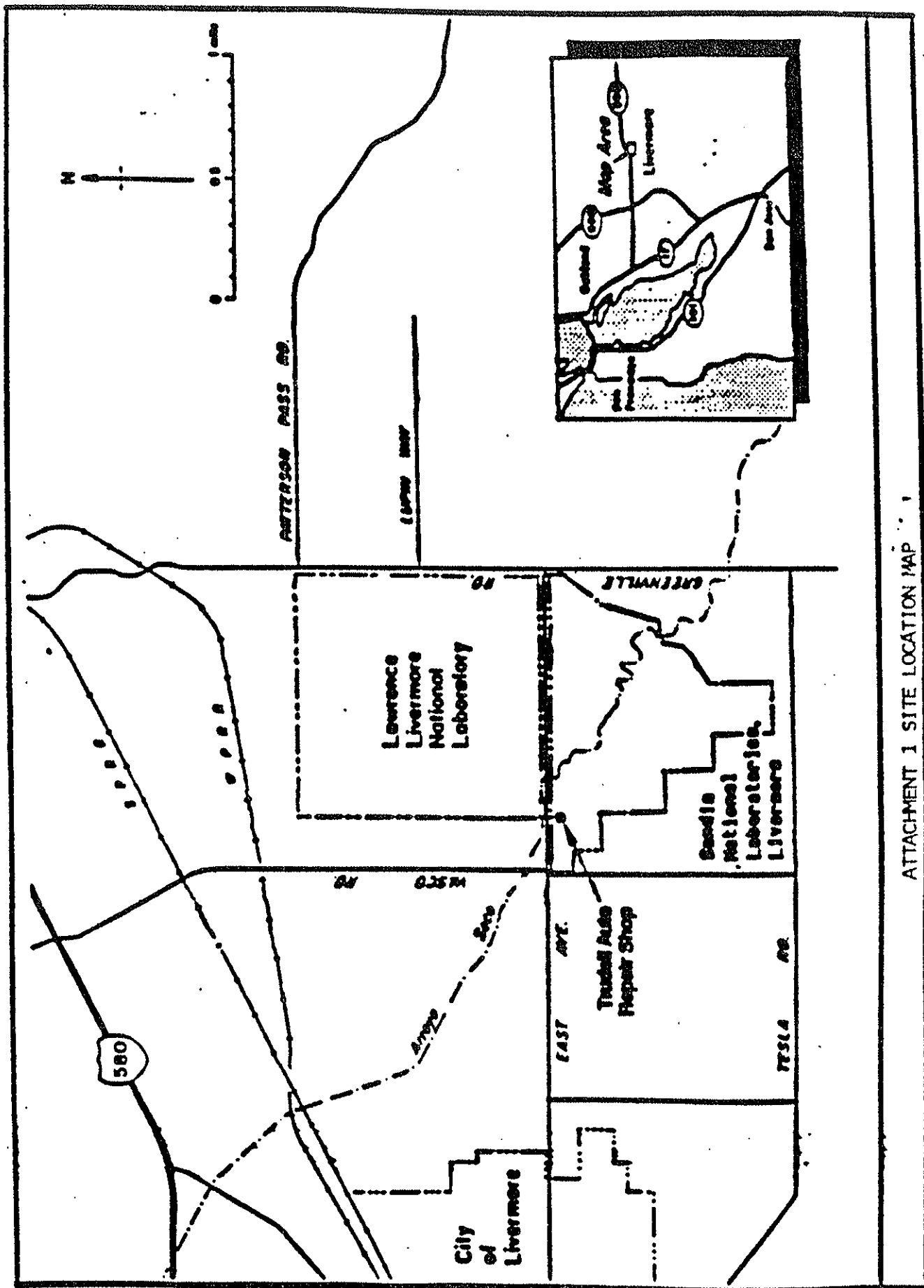
I, Steven R. Ritchie, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 13, 1989.



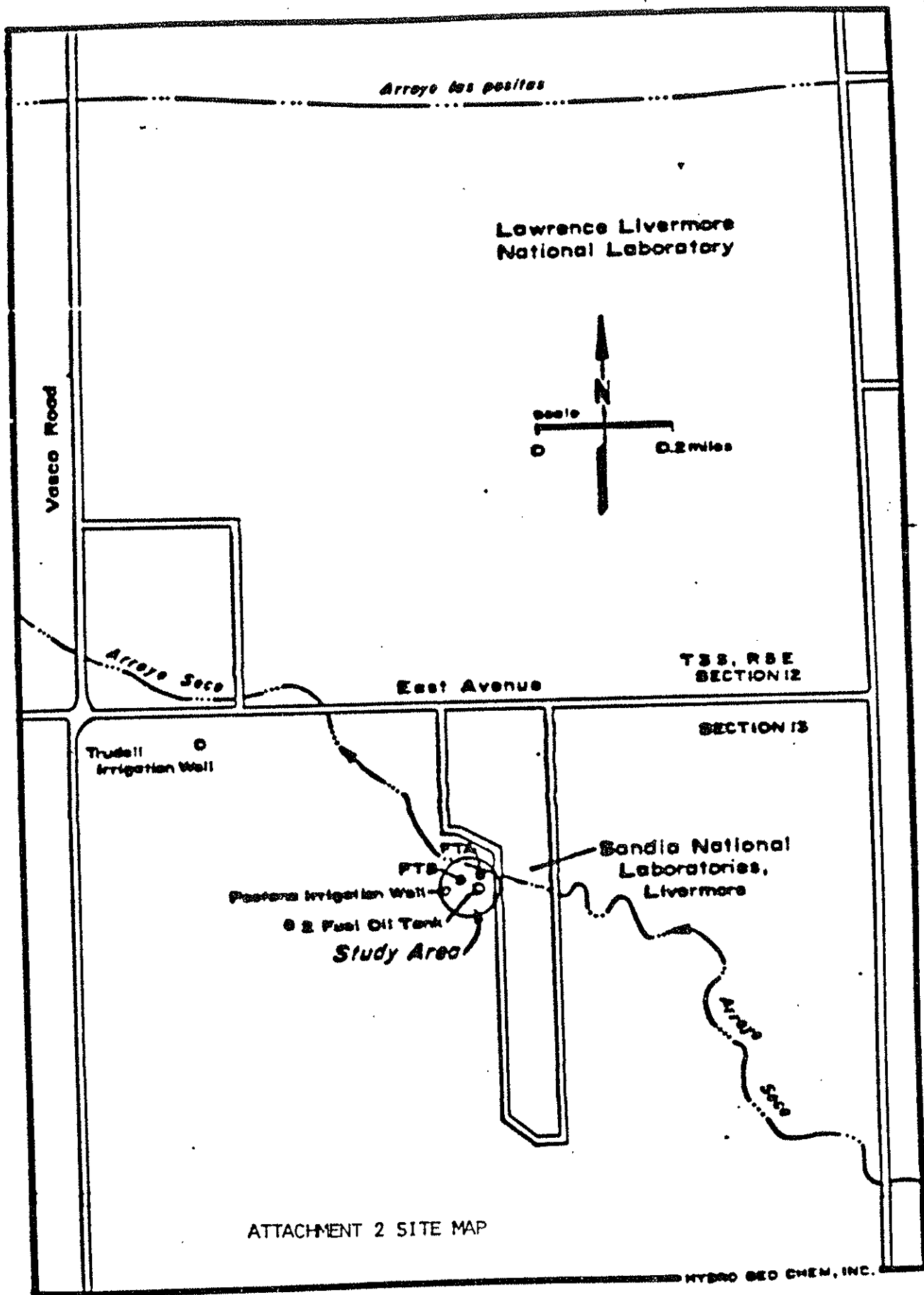
STEVEN R. RITCHIE
Executive Officer

ATTACHMENTS:

1. Site Location Map
2. Site Map
3. Facility Map with Buffer Properties



ATTACHMENT 1 SITE LOCATION MAP



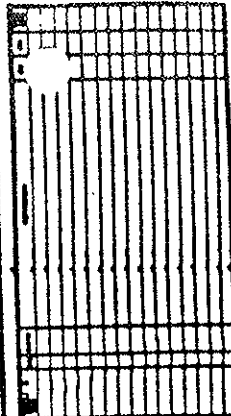
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ORGANIZATIONAL DESIGN

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CONSIDERATION OF ADDITIONAL LOADS

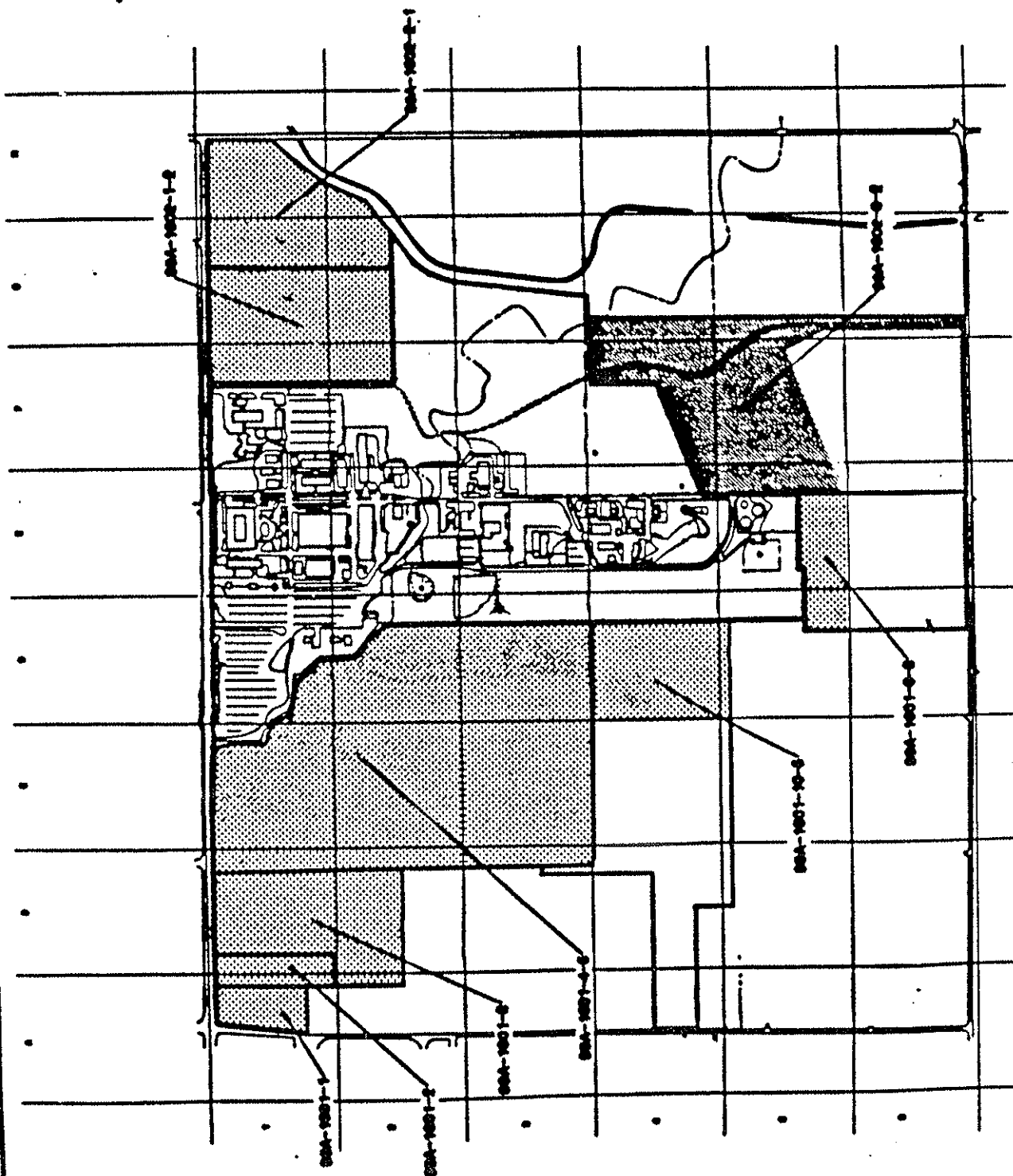
OPTION 2 -

STATE OF VERMONT PLAN

**SITE DEVELOPMENT PLAN
SANDIA NATIONAL LABORATORIES**



11-11-11



ATTACHMENT 3 FACILITY MAP WITH BUFFER PROPERTIES